

Claims

1 1. A variable speed drive system for driving accessories comprising:

2 a rotational member;

3 a controllable pulley in rotational communication with said rotational member, said
4 controllable pulley including a first movable flange and a corresponding adjustable pitch radius;

5 an auto-tensioning pulley driven by said controllable pulley via a first belt, said auto-
6 tensioning pulley for maintaining tension in said first belt and said auto tensioning pulley having
7 an operating speed which is infinitely variable between a minimum pitch ratio and a maximum
8 pitch ratio;

9 an actuating system for moving said first movable flange; and

10 one or more accessories which are driven by said auto-tensioning pulley via a second
11 belt.

1 2. The variable speed drive system of claim 1 wherein the actuating system comprises a linear
2 actuating member which generates a force in-line and parallel with the direction of movement of
3 the first movable flange.

1 3. The variable speed drive system of claim 1 wherein said actuating system is a hydraulic
2 system comprising a hydraulic pump, a control valve, a source of hydraulic fluid, and a
3 hydraulically operated piston connected to said movable flange.

1 4. The variable speed drive system of claim 3 further comprising a control logic module for
2 receiving data from one or more sensing devices and for signaling the actuating system.

1 5. The variable speed drive system of claim 3 wherein said actuating system further comprises a
2 hydraulic reservoir and wherein the hydraulic reservoir and hydraulic pump are located remotely
3 from said controllable pulley.

1 6. The variable speed drive system of claim 1 further comprising a control logic module for
2 receiving data from one or more sensing devices and for signaling the actuating system.

1 7. The variable speed drive system of claim 1 wherein said controllable pulley further comprises
2 a second movable flange.

1 8. The variable speed drive system of claim 1 wherein said auto-tensioning pulley includes an
2 auto-tensioning device which is a spring.

1 9. A vehicle comprising the variable speed drive system of claim 1.

1 10. The variable speed drive system of claim 1 further including a vehicle wherein said variable
2 speed drive system is mounted in said vehicle.

1 11. The variable speed drive system of claim 1 further including a counterweight system for
2 partially countering the effect of rotating hydraulic fluid comprising a cable bracket, a cable, and
3 a weight.

1 12. The variable speed drive system of claim 1 further including a spring venting system for
2 partially countering the effect of rotating hydraulic fluid comprising a spring, a bracket, and a
3 spring housing.

1 13. The variable speed drive system of claim 1 wherein said rotational member is an engine.

1 14. A variable speed drive system for driving engine accessories comprising:

2 an engine;

3 a first controllable pulley in rotational communication with said engine, said first
4 controllable pulley including a first movable flange and a corresponding adjustable pitch radius;

5 a second controllable pulley driven by said first controllable pulley via a first belt, said
6 second controllable pulley having a second movable flange, and an operating speed which is
7 infinitely variable between a minimum pitch ratio and a maximum pitch ratio;

8 an actuating system for moving said first movable flange; and

9 a belt driving sheave attached to said second controllable pulley which drives one or
10 more accessories via a second belt.

1 15. The variable speed drive system of claim 14 wherein at least one of said first and second
2 controllable pulleys further comprises an additional movable flange.

1 16. The variable speed drive system of claim 14 further comprising a control logic module for
2 receiving data from one or more sensing devices and for signaling the actuating system.

1 17. A variable speed drive system for driving accessories comprising:

2 a rotational member;

3 an auto-tensioning pulley in rotational communication with said rotational member, said
4 auto-tensioning pulley for maintaining tension in a first belt;

5 a controllable pulley driven by said auto-tensioning pulley via said first belt, said
6 controllable pulley including a first movable flange and a corresponding adjustable pitch radius,
7 and said controllable pulley having an operating speed which is infinitely variable between a
8 minimum pitch ratio and a maximum pitch ratio;

9 an actuating system for moving said first movable flange; and

10 one or more accessories which are driven by said controllable pulley via a second belt.

1 18. A vehicle comprising:

2 an engine;

3 a first controllable pulley in rotational communication with said engine, said first
4 controllable pulley driving a first belt and including a first movable flange and a corresponding
5 adjustable pitch radius;

6 an actuating system for moving said first movable flange;

7 one or more accessories which are driven by a second belt; and

8 rotating means, said rotating means rotatably connected to said first and second belts,
9 said rotating means having an operating speed which is infinitely variable between a minimum
10 pitch ratio and a maximum pitch ratio.

1 19. The vehicle of claim 18 wherein said rotating means comprise an auto-tensioning pulley
2 having a spring-biased movable flange, said auto-tensioning pulley having an operating speed
3 which is infinitely variable between a minimum pitch ratio and a maximum pitch ratio.

1 20. The vehicle of claim 18 wherein said rotating means comprise a second controllable pulley
2 having an operating speed which is infinitely variable between a minimum pitch ratio and a
3 maximum pitch ratio.

1 21. The vehicle of claim 18 wherein the actuating system comprises a linear actuating member
2 which generates a force in-line and parallel with the direction of movement of the first movable
3 flange.

1 22. The vehicle of claim 18 further comprising a control logic module for receiving data from
2 one or more sensing devices and for signaling the actuating system.

1 23. The vehicle of claim 22 wherein said control logic module is an on-board electronic engine
2 control module of the vehicle.

1 24. The vehicle of claim 18 wherein said vehicle includes a power steering pump and a power
2 steering fluid reservoir, wherein said actuating system comprises said power steering pump, and
3 said power steering fluid reservoir.

1 25. The vehicle of claim 18 wherein said actuating system comprises an electromechanical linear
2 actuation device .

1 26. The vehicle of claim 18 wherein said actuating system comprises a thermally responsive
2 material.

1 27. The vehicle of claim 18 wherein said actuating system comprises one or more magnets.

1 28. The vehicle of claim 18 further comprising a non-rotating chamber system.

1 29. A vehicle comprising:

2 an engine;

3 one or more engine-driven accessories;

4 means for driving said accessories wherein said means are independent of engine
5 operating speed and infinitely adjustable between a first minimum underdrive condition and a
6 second maximum overdrive condition.

1 30. The vehicle of claim 29 wherein said means are remotely controllable.

Continued